

Claims

- [c1] 1. In a tandem brake booster having a housing formed by a front shell that is joined to a rear shell to create an interior cavity that is divided by a first diaphragm assembly and a second diaphragm assembly and thereby isolate a first chamber from a second chamber and a third chamber from a fourth chamber, said first and second diaphragm assemblies being separated from each other by a partition member, said first and third chambers being connected to constantly receive a fluid having a first pressure while said second and fourth chambers are selectively connected to receive either the fluid having the first pressure or fluid having a second pressure as a function of the operation of valve means, said valve controls the communication of fluid at said second pressures to said second and fourth chambers to create a pressure differential across said first and second diaphragm assemblies with the first fluid in the first and third chambers to develop an output force and thereby effect a brake application, said partition member being characterized by a disc with a cylindrical body extending from a ledge formed on a peripheral surface of the disc and a flange located on said cylindrical body between

said ledge and an end face of the cylindrical body, said flange being formed with alternate radial sections and ramped sections, said radial sections engaging said rear shell to located said partition member within said interior cavity while said ramped sections define a first portion of a flow path for communication of fluid between said second and fourth chambers.

[c2] 2. The tandem brake booster as recited in claim 1 wherein said rear shell has a second cylindrical body with a first diameter section that is separated from a second diameter section by a first shoulder and a third diameter section that is separated from the second diameter section by a second shoulder, said radial sections of said flange engage said first shoulder in axially fixing the position of said partition member within said interior cavity.

[c3] 3. The tandem brake booster as recited in claim 2 wherein said radial sections of said flange engage said first diameter of said rear shell to radially locate said partition member within said interior cavity.

[c4] 4. The tandem brake booster as recited in claim 3 wherein said first diaphragm assembly is characterized by a first bead having a first thickness and being located on said ledge, said first bead having a first plurality of

passages that form a second portion of said flow path between said second and fourth chambers.

[c5] 5. The tandem brake booster as recited in claim 4 wherein said second diaphragm assembly is characterized by a second bead having a second thickness, a first groove for receiving said end face of said cylindrical body of said partition member and an annular lip that engages said cylindrical body and is concentrically located between said second diameter of said rear shell and said cylindrical body, and a second plurality of passages that form a third portion of said flow path between said second and fourth chambers.

[c6] 6. The tandem brake booster as recited in claim 5 wherein said annular lip on said second bead extends to a location adjacent said flange such that a space is defined between said flange and an end of said lip to create an annular second groove through which said second plurality of passages are connected with said ramped section of said flange.

[c7] 7. The tandem brake booster as recited in claim 6 wherein in joining said rear shell to said front shell a closure force is created that compresses said first bead between said ledge and front shell and a first reaction force develops that urges said radial sections of said flange

into engagement with first shoulder on said rear shell and compresses said second bead between said end face of said cylindrical body and said second shoulder on said rear shell to develop a second reaction force in sealing said interior cavity from the surrounding environment.

[c8] 8. The tandem brake booster as recited in claim 7 wherein said first reaction force is greater than said second reaction force such that said flange on said partition member always remains in contact with said first shoulder.

[c9] 9. The tandem brake booster as recited in claim 8 wherein a third annular space between said cylindrical body of said partition member and said first diameter of said rear shell define a fourth portion of said flow path.

[c10] 10. The tandem brake booster as recited in claim 9 wherein said first and second plurality of passages in said first and second diaphragm members are uniformly spaced thereon but need not be axially aligned with said ramp sections on said flange as said annular second groove and said third annular space provide unrestricted communication between said second and fourth chambers.